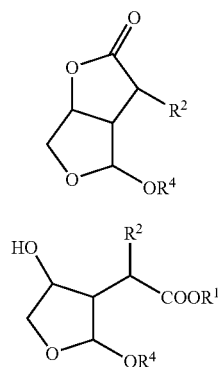


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wherein  $P^1$  and  $P^2$  represent each independently a hydrogen, a hydroxy-protecting group or may together form a vicinal-diol protecting group,  $R^1$  represents alkyl, aryl or aralkyl,  $R^2$  represents hydrogen or  $C(=O)OR^3$ ,  $R^3$  represents alkyl, aryl or aralkyl, or  $R^3$ , if present, and  $R^1$  taken together with the atoms to which they are attached may form a 6 to 8-membered cyclic group which may be optionally substituted with alkyl, aralkyl, or aryl; provided that when  $R^2$  is hydrogen and  $P^1$  and  $P^2$  taken together form an isopropylidene, then  $R^1$  is other than methyl or ethyl.

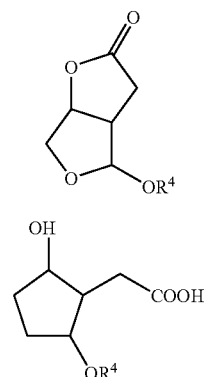
22. An intermediate having the formula (4) or (4'),



wherein  $R^1$  represents alkyl, aryl or aralkyl;  $R^2$  represents hydrogen or  $C(=O)OR^3$ ;  $R^3$  represents alkyl, aryl or aralkyl, or  $R^3$ , if present, and  $R^1$  taken together with the atoms to which they are attached may form a 6 to 8-membered cyclic group which may be optionally substituted with alkyl, aralkyl, or aryl; OR<sup>4</sup> represents an alcoholate.

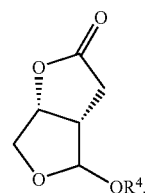
23. An intermediate having the formula (5) or (5'),

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wherein OR<sup>4</sup> represents an alcoholate.

24. An intermediate according to claim 23 wherein the intermediate has the formula (5a)



25. An intermediate according to claim 24 in crystalline form.

\* \* \* \* \*